Chapter - I

Evolution of India's Nuclear Programmes and Policies

Introduction:

India's nuclear programme can be traced back to 1944 when the noted Indian physicist Homi J. Bhaba proposed to the Sorabji Tata Trust to set up an institute to train nuclear scientists who would in turn carry out extensive research on nuclear physics. The proposal had been prompted by Homi J. Bhaba, who had studied Eurico's Fermi's experiment of a self sustaining chain reaction on a uranium core moderated by graphite rods and understood the future possibilities.[1] It was indeed a landmark in India's nuclear research advancement. Based on Bhaba's proposal, the Tata Institute of Fundamental Research was set up in 1945. This was the starting point of India's nuclear programme. In the initial stages, the programme was intended towards the use of nuclear energy for peaceful purposes. The reason as to the shift from one end of the spectrum to the other is manifold. Before we trace the history of India's nuclear development, the three schools of thought on India's nuclear programme may be listed. The conclusions as to which school of thought was correct would be very difficult to arrive at.

The Three Schools of Thought Regarding India's Nuclear Programme:

1. According to the first school of thought, India always kept its option of nuclearisation open, because it was a question of 'when' and not 'whether'.

1. Raja Menon, 'A Nuclear strategy for India', (New Delhi, Sage 2000), p. 66

Towards this end, the government and the scientists realised the military dimension of a nuclear programme and used the cover of use of nuclear energy for peaceful purposes as an excuse to continue research aimed at weaponisation.

2. The second school of thought is of the opinion that the approach of the nuclear Big 5, their stockpiling of weapons and their indifference to India's ethical and moral calling for global disarmament. US turning a blind eye to Pakistan's clandestine nuclear programme and the China factor forced India to change track from using nuclear energy for peaceful purposes for making atomic bombs.

3. The third school of thought, though distinctly lesser is number, is of the view that India's scientific community was a forceful impetus on India's decision makers in compelling India to go nuclear.

India's nuclear development can be examined through a study of different Phases.

(1) Nehru's Era of Abstinence 1947 to 1960.

(2) Era of Disenchantment 1961 to Pokhran I.

(3) Era of Nuclear Ambiguity and Restraint 1975 to 1996.

(4) Collapse of Ambiguity. Slippage into Deterrence, 1997 to Pokhran II.

Nehru's Era of Abstinence - 1947 to 1960:

India's first Prime Minister Pandit Nehru saw nuclear power in its peaceful capacity as providing India with the ability to leap from many technologies. His

vision for a modern, self-sufficient India included technological development. Nehru was strongly opposed India's nuclear weapon programme as was his closest confidant and advisor Krishna Menon. Both of them played an important part in shaping India's nuclear policy and its nuclear programme in the Nehruvian Era of abstinence. In fact, during Nehru era Indian nuclear advancement got an opening and momentum. As mentioned earlier, the Tata Institute of Fundamental Research had been set up in 1945 in Bombay. After independence, Bhabha convinced Nehru of the importance of atomic energy research in enabling India to build an industrial base to tackle the overwhelming problem of entrenched poverty. Bhaba's views impressed Nehru, who had a scientific bent of mind and was committed to abolishing poverty. Nehru believed that peaceful use of nuclear energy was the keystone in achieving this objective.

In late 1945 the Atomic Energy Commission was established under the Council of Scientific & Industrial Research. However, due to the efforts of Homi Bhaba, who wanted autonomy in functioning both the AEC and the Department of Atomic Energy which was established on 03 August 1954 became independent bodies with Homi Bhaba as the Chairman. Bhaba as the first head of the DAE zealously worked to preserve the organizational autonomy of India's nuclear energy estate. From the outset, the Indian Atomic Energy establishment, under the direction of the Prime Minister enjoyed a high degree of autonomy and was largely shielded from public scrutiny. Freeing the DAE and the AEC from scientific and administrative set up bureaucracy was a major achievement by itself. Bhaba was answerable only to Nehru. He could run both the DAE and the AEC professionally and without bureaucratic interference. This was one of the major

reasons attributed to the considerable progress made in this era in India's nuclear programme. The options of Nehru and Bhaba regarding nuclear weapons in this era are relevant to the development of India's programme.

Nehru always opposed the development of nuclear weapons in public view. His opposition to nuclear weapons was in accordance with his deep-rooted opposition to the use of force to solve international disputes. This conviction was also rooted in the Gandhian legacy of the Indian Nationalist Movement. Nehru's aversion to nuclear weapons was also due to his fear of the militarisation of the Indian society. He was firm in his belief that military spending in any form was a necessary evil.

It should be pointed out that in 1947, when India emerged as a free country; the nuclear age had already dawned. Development of nuclear technology of transformed the nature of global security. Our leaders reasoned that nuclear weapons were not weapons of war; these were weapons of mass destruction. A nuclear-weapon-free-world would, therefore, enhance not only India's security, but also the security of all nations. However, in the absence of universal and non-discriminatory disarmament, India could not accept a regime that created an arbitrary division between nuclear haves and have-nots. The basis of India's nuclear policy has remained global nuclear disarmament or equal and legitimate security for all.

In the 1950s, when nuclear weapons testing were taking place above ground, India took the lead in working for an end to all nuclear weapon testing as the first step for ending the nuclear arms race. In 1954, Jawaharlal Nehru called for negotiations for prohibition and elimination of nuclear weapons and in the interim,

a standstill agreement to halt nuclear testing. The world had, by then, witnessed less than 65 tests. Our call was not heeded. In 1963, an agreement was concluded to ban atmospheric testing but by this time, countries had developed the technologies for conducting underground nuclear tests and the nuclear arms race continued unabated. More than three decades and over 200 tests later, a Comprehensive Test Ben Treaty (CTBT) was opened for signature in 1996.

In 1965, along with a group of Non-Aligned countries, India mooted the idea, in the shadow of deepening security concerns, of an international non-proliferation agreement under which the nuclear weapon States would agree to give up their arsenals provided other countries refrained from developing or acquiring such weapons. The balance of rights and obligations was absent when the Nuclear Non-Proliferation Treaty emerged in 1968. India therefore made clear its inability to sign the NPT.

Our decision not to sign the NPT was in keeping with the basic objective of maintaining freedom of thought and action. In 1974, we demonstrated our nuclear capability. Successive governments thereafter continued to take necessary steps in keeping with that resolve to safeguard India's nuclear option. This was also the primary reason underlying the 1996 decision in the country not to subscribe to the CTBT. Our perception then was that subscribing to the CTBT would severely limit India's nuclear potential at an unacceptably low level. Our reservations deepened, as the CTBT did not also carry forward the nuclear disarmament process. On both counts, therefore, yet again, our security concerns remained unaddressed.

The decades of the 1980s and 1990s witnessed a further deterioration of our security environment as a result of nuclear and missile proliferation. A pattern

of clandestine acquisition of nuclear materials, missiles and related technologies also came into existence. India in this period became the victim of externally aided and abetted terrorism, militancy and clandestine war through hired mercenaries. Thus, while the end of the Cold war transformed the political landscape of Europe, it did little to address India's security concerns.

At the global level, there is no evidence yet on the part of the nuclear weapon States to take decisive and irreversible steps in moving towards a nuclear-weapon-free-world. Instead, the NPT has been extended indefinitely and unconditionally, perpetuating the existence of nuclear weapons in the hands of the give countries who are also permanent members of the UN Security Council. Some of these countries have doctrines that permit the first use of nuclear weapons. These countries are also engaged in programmes of modernization of their nuclear arsenals.

Under such circumstances, India was left with little choice. It has to take necessary steps to ensure that the country's nuclear option, developed and safeguarded over decades, was not eroded by a self-imposed restraint. At a time when developments in the area of advanced technologies are taking place at breathtaking pace, new parameters need to be identified, tested and validated in order to ensure that skills remains contemporary and succeeding generations of scientists and engineers are able to build on the work done by their predecessors. The limited series of five tests undertaken by India was precisely such an exercise. It has given India the requisite resources to ensure a credible deterrent.

These tests were not directed against any country. They only provide a reassurance to the people of India about their security. India remains fully

committed to the promotion of peace with stability, and resolution of all outstanding issues through bilateral dialogue and negotiations. We will continue to remain engaged in substantive dialogue with our neighbours to improve relations and to expand the scope of our interactions in a mutually advantageous manner. Confidence building is a continuous process; re remain committed to it. Consequent upon the tests and arising from an insufficient appreciation of our security concerns, some countries have been persuaded to take steps that sadden us. We value our bilateral relations. We remain committed to dialogue and reaffirm that preservation of India's security creates no conflict of interest with these countries.

Our nuclear policy has been marked by restraint and openness. It has not violated any international agreements either in 1974 or now, in 1998. Our concerns have been made known to our interlocutors in recent years. The restraint exercised for 24 years, after having demonstrated our capability in 1974, is in itself a unique example. Subsequent to the tests, the Government has already stated that India will now observe a voluntary moratorium and refrain from conducting underground nuclear test explosions. India has also indicated that it will not stand in the way of the entry into force of the CTBT by September 1999. India will also participate in negotiations in the Conference on Disarmament in Geneva on a Fissile Material Cut-off Treaty to prohibit future production of fissile materials for use in nuclear weapons or nuclear explosive devices.

India has maintained effective export controls on nuclear materials as well as related technologies, even though we are neither party to the NPT nor a member of the Nuclear Suppliers Group. In fact, India's conduct has been better than

some countries party to the NPT. India is committed to non-proliferation and the maintaining of stringent export controls to ensure that there is no leakage of our indigenously developed know-how and technologies.

India is a nuclear weapon State. This is a reality that cannot be denied. It is not a conferment that we seek; nor is it a status for others to grant. Our strengthened capability adds to our sense of responsibility. India has announced that it shall not be the first to use these weapons. These are weapons of self-defence to ensure that India is not subjected to nuclear threats or coercion. India shall not engage in an arms race nor reinvent the doctrines of the Cold War. India's nuclear doctrine would be based on a minimum but credible deterrent, no first use and a firm commitment to global elimination of nuclear weapons.

India has taken many initiatives in the past for the elimination of all nuclear weapons. It is our regret that these proposals did not receive a positive response from other nuclear weapon States. Had their response been positive, India need not have gone for the current tests. This is where our approach to nuclear weapons is different from others. This difference is the cornerstone of our nuclear doctrine. It is marked by restraint and striving for the total elimination of all weapons of mass destruction. We have been and will continue to be in the forefront of the calls for opening negotiations for a Nuclear Weapons Convention, so that this challenge can be dealt with in the same manner that we have dealt with the scourge of two other weapons of mass destruction, through comprehensive, universal and non-discriminatory treaties.

Nehru made a statement in 1957: "No man can prophecy the future. But I should like to say on behalf of any future government of India that whatever

might happen, whatever the circumstances, we shall never use this atomic energy for evil purposes". The statement was made at the inauguration of *Apsara*, India's first nuclear reactor at Trombay 20 January, 1957. It was a landmark in India's nuclear development.

Despite his public opposition to nuclear weapons, Nehru granted Bhaba a free hand in the development of India's nuclear infrastructure and sought to lay the necessary foundations should a political decision to acquire nuclear weapons be made. In a speech in 1946 in Bombay, Nehru stated "India will use atomic force for constructive purposes. But if India is threatened, she will inevitably try to defend herself by all the means at her disposal.[2] In pursuit of this end, Bhaba worked towards a complete mastery of the nuclear fuel cycle and a completely indigenous production process.

India's civilian nuclear energy programme has a 'dual use' or military capacity of which both Nehru and Bhaba were well aware. While Nehru was categorically opposed to the bomb, Bhaba was less rigid in his view and not opposed to a possible future bomb. Certain events would wide have a bearing on the nuclear programme of Indian in this era.

⇒ In the year 1953-54, nuclear supremacy of USA was broken by a Soviet thermonuclear test

⇒ In 1955-56, Pakistan agreed to join the CENTO.

⇒ Pakistan was given $ 2 million, the first of many arms transfer for joining CENTO.

---

2. The Kargil Review Committee Report, (New Delhi; Sage 1999), p. 200.

⇒ In 1955 the Chinese Government announced a major Soviet-Chinese collaborative effort aimed at providing China with a reactor, a cyclotron, fissile materials and any number of experts.[3]

⇒ In 1956 China announced the construction of experimental reactors outside Beijing.

⇒ In April 1956 Moscow announced that it would build a 60000 KW nuclear reactor in China.

⇒ UK exploded its first hydrogen bomb in January 1957.

All these incidents dictated the need for a strong technical base for India. India's scientific community received extensive political support. The defence advisor to Britain, Lord PMS Blackett recommended to Nehru the setting up of a giant network of laboratories under CSIR.

The progress of India's distinguished period was slow but steady. The AEC set up the Rare Minerals survey unit in 1950 under Wadia, one of India's most famous geologists. The AEC also established the India Rare Earths Ltd. In 1952. Wadia's effort was primarily responsible for locating the uranium deposits in Jaduguda in 1952 and Narwapahar in 1963.[4]

India's thorium plant at Trombay went into production in 1955. The Canadians offered technology transfer under the Colombo Plan. Though the Indo-Canadian agreement had been signed only in April 1956. India's first nuclear reactor Apsara was commissioned in January 1957 by Nehru. In November 1958 India's

---

3. Leo Yueh-YunLiu, 'China as a Nuclear Power in the World', (London; Macmillan, 1972), p. 51.

4. Raja Menon. 'A Nuclear Strategy for India', (New Delhi: Sage 2000) p. 68.

Uranium processing plant was commissioned in Trombay and three months later pure uranium was being produced.

During this period, India under Nehru's stewardship was vigorously pursuing its fight against nuclear weapons in various international forum including the UN. This period could be characterized as one of intense idealism. Gandhi writing in the Harijan said 'I regard the employment of the atom bomb for the wholesale destruction of men, women and children as the most diabolical use of science'.[5] In 1954 Nehru proposed the "Standstill Agreement" between the nuclear weapon states. In 1955 Nehru commissioned the Defence Service Organisation to study the consequences of nuclear weapons use. The findings of this committee were later presented to the UN General Assembly by Krishna Menon. During this period India presented eight disarmament initiatives either separately or jointly within various bodies of the UN.[6]

By mid to late 50s there was a slight shift in the Indian Government's position. These changes partly reflected the changes taking place in the international arena, which have been covered earlier. In essence, India's nuclear policy in Nehru's era of abstinence continued to be premised upon:

⇒ A sense of idealism that drew sustenance from Gandhi's belief of non-violence.

⇒ An understanding that nuclear weapons are an extension of the philosophy of violence and therefore need to be countered by nuclear disarmament.

---

5. Mahatma Gandhi. 'With an English Journalist', Harijan (New Delhi), 29 Sept. 1946.
6. Aabha Dixit. 'Status Quo: Maintaining Nuclear Ambiguity', India & the Bomb, (Notre Dame Press USA, 1996), p. 55.

⇒ A belief that peaceful uses of nuclear technology can benefit the community and therefore should be pursued with zeal.

⇒ A conviction that the pursuit of peaceful uses of nuclear technology, should remain within the domain of individual countries, with apex bodies like IAEA helping to promote and assist research on a non-discriminatory basis.

Phase II 1960 to Pokhran I

Era of Disenchantment:

The period from 1960 to 1974 can best be described as a period of disenchantment. India was disillusioned with the prospect of global disarmament. Two major factors shifted India's policy from a 'no bombs' to a 'no bombs now'. The events were.

⇒ 1962 Indo-China war.

⇒ Chinese nuclear test neither at Lap Nor on 16th October 1964.

In fact the second phase of India's nuclear programme started shortly after the Chinese test at Lap Nor.[7] As early as 1958 Bhaba had conversation with a British physicist and defence advisor Lord PMS Blackett about his interest in the acquisition of nuclear weapons.[8] Bhaba also declared before the Parliamentary Consultative Committee on Atomic Affairs in December 1959 that India had

---

7. Sumit Ganguly. 'Explaining Indian Nuclear Tests', India's Nuclear Strategy (New Delhi, Vistaar 2000) p. 41.

8. Sumit Ganguly., Ibid. p. 40.

progressed to a stage where, if a political directive was received a bomb could be made without external assistance. The time limit was not specified.[9]

In spite of all these slight shifts the predominant strand of opinion in the 50s and initial period of the 60s was against the weapon option. However, the 1962 Chinese aggression and China's nuclear test which followed thereafter had a profound impact on the psyche of Indian opinion makers and the political hierarchy.

By 1963 itself it was clear that China was rapidly moving to test a nuclear device. Eight months before the Chinese nuclear test at neither Lap nor, Homi Bhaba said at Pugwash Conference in Udaipur in January 1964 that "Nuclear weapons with an adequate delivery system can enable a state to acquire the capacity to destroy more or less totally the cities, industry and all important targets in another state. It is then largely irrelevant whether the state so attacked has greater destructive power at its command. With the help of nuclear weapons, therefore, a state may acquire what we may call a position of absolute deterrence even against another having many times greater destructive power under its control".[10] Bhaba also went on to add that if any state be asked to renounce a possible dependence to redress the balance of power against a larger and more powerful state such as China, its security must be guaranteed by both the major powers.

Meanwhile, India signed the PTBT (Partial Test Ban Treaty), which came into force on 10 October 1963. The PTBT prohibited atmospheric tests. In

---

9. Raja Menon, Ibid. p. 71.

10. Homi J, Bhaba. 'Proceedings of the Twelfth Pugwash Conference', 1964, Udaipur, p. 75.

December 1963, India and US signed the agreement on the Tarapur Atomic Power Plant. The intensity of Indo-US cooperation under Kennedy prompted the export to India of the CDC-3600-140A Computer which could be used to simulate nuclear fission. In early May, Nehru made his last pronouncement on India's refusal to make a bomb but died three weeks later. The Chinese exploded their first bomb on 18 October 1964 at Lap Nor.

The Chinese nuclear explosions left the Indians with two opinions. First to go in for the bomb option and second to seek security guarantees from the other nuclear powers. Without going into the details, the nuclear powers declined to provide any sort of nuclear guarantees.

The NPT:

It is at this time that the Nuclear Non-Proliferation Treaty issue came up. India did not sign the NPT when it opened for signatures in 1968. The major reason for non-signature was China's decision not to sign and India's reluctance to commit itself in the absence of security guarantees. Also the political and scientific community were key factors in keeping the nuclear option open.

The refusal of the major nuclear powers to provided security guarantee and the various other factors at that time forced Lal Bahadur Shastri to sanction a proposal put forward by Bhaba to investigate a "Subterranean Nuclear Explosion Project".[11] The delay in conduct of a Peaceful Nuclear Explosion from 1965, when it was consented to by Shastri to 1974 when it finally occurred, can be attributed to the tendency to treat the nuclear weapon as a foreign policy issue

---

11. K. Subrahmanyam, 'Indian Nuclear Policy', 1964-98, Nuclear India, 1999.

and the failure to grasp the essentials of nuclear strategy arising from the use of the bomb as a weapon. Also there was a total lack of institutionalised thinking and multi-disciplinary inputs.[12] According to Sundarji the 'wait and watch' attitude could be attributed to a combination of three factors.

⇒ India's perception that in a bipolar world, with two super powers, any flexing of muscles by a regional small nuclear power like China was unlikely.

⇒ India's missile programme had not yet even commenced and air delivered nuclear weapons would have been out of range to the then Indian fighter-bombers.

⇒ The eroding but still present ideological drag induced by past pacifism coupled with lack of strategic thinking.[13]

The cold storage of the Subterranean Nuclear Explosion Project could also be attributed to the death of Homi Bhaba who died in air crash in 1966. After his death Vikram Sarabhai took over as the Secretary of the DAE and Chairman of AEC. Vikram Sarabhai was well known for his anti-bomb view and effected policies which ensured progress towards a PNE continued at an unhurried pace.

On the nuclear programme side the plutonium re-processing plant at Trombay was inaugurated their second nuclear bomb. Between May and December 1967, Chinese conducted four tests including a thermo-nuclear one. Another important event was the sanctioning of Purnima I nuclear reactor in 1967 and the

---

12. Raja Menon, Ibid., p. 76.

13. K. Sundarji, 'India's Nuclear Weapon Policy, Nuclear Rivalry and International Order' (New Delhi, Sage, 1996) p. 174.

AEE under Sethna to build a reactor, located next to the plutonium facility. Purnima was the hub of training for most of the scientists who eventually participated in Pokhran I. The scientists included S N Seshadri, A K Ray and P R Roy and P K Iyengar. Purnima was the school that led both to Pokhran I and the research reactor Dhruva. Purnima was followed by Purnima II, III and Kamini all of which were

Made to explore the thorium route more scientifically. Purnima II went critical in May 1972 without any moderator.[14]

The 1965 Indo-Pakistan conflict had no bearing on India's nuclear programme except that during the was a hundred Congress MPs (Member of Parliament signed a statement saying that India should make a nuclear bomb to avoid being overwhelmed by a Sino-Pakistan collusion. China launched its first satellite in 1970. In response to this event a symposium of scientists, political and defence analysts, economists and MPs was held in New Delhi. The symposium came to the conclusion that India had no option but to acquire nuclear weapons.[15] in the early 70s, Vikram Sarabhai, Chairman AEC announced a balanced but modest 10 years profile for space and nuclear programmes including one or more peaceful nuclear explosions. The profile in brief is under[16]:

Space Technology Plans:

⇒ Fabrication of inertial navigation systems.

⇒ The construction of a rocket fabrication plant.

---

14. Raja Menon, Ibid., p. 80.

15. Hindustan Times, 10 May 1970.

16. Raja Menon, Ibid. p. 82.

⇒ Fabrication of satellites with the goal of launching an 80 kg. Satellite by 1975 and an 1800 kg. Satellite by 1985.

Nuclear Plans:

⇒ Installation of 1200 MW of power of 1980.

⇒ Construction of 500 MW FBR.

⇒ Development of gas centrifuges for enriching uranium.

⇒ Building of a nuclear fuel complex.

The slow but sure progress towards the pro bomb view was reinforced by the US tilt towards Pakistan in the Indo-Pak war of 1971. The entry of the nuclear-armed aircraft carrier USS Enterprise into the Bay of Bengal on 22 December 1971 was viewed by India as an attempt by US to use nuclear blackmail to end the conflict. President Nixon in an interview to Times magazine on July 4, 1985 admitted that he had considered using nuclear weapons during Indo-Pakistan war of 1971 had the Soviets intervened.[17] these developments were amongst the deciding factors in India's security calculus that led to the peaceful nuclear explosion of 1974.

The idea of Pokhran I explosion was mooted by Raja Ramanna to Chidambaram in 1967 when Sarabhai was Chairman of the AEC and the SNEP was under official suspension.[18] Plutonium was being processed in sufficient quantity by the plutonium processing facility, using spent rods from the Cirus, the nuclear reactor.

---

17. 'Time', July 29, p. 85.

18. Raja Menon, Ibid. p. 85.

N. Seshagiri was directed by Sarabhai to prepare a cost benefit study for a PNE. This study was made available in 1971. The study supported the PNE.[19] Thus as the 70s commenced India had the capability and motivation to conduct a nuclear test.

The hole for the PNE was dug late 1972/early 1973 and the device was actually ready by mid 1973. India carried out its first nuclear test on 18 May 1974. The blast produced a yield of 12 kilotons +/- 10 percent. In spite of the nuclear explosion there is little doubt that the Prime Minister Mrs. Indira Gandhi had no further nuclear ambitions in mind. The then Defence Minister Jagjivan Ram stated that the test had few or no military implications and was simply part of India's ongoing attempts to harness the peaceful uses of nuclear energy.[20]

The Indian explanation for the test found few adherents abroad. Of the great powers only the French congratulated the Indians on their success of the first nuclear test. The Chinese and Soviet reaction were muted but critical. The US and Canada cut off nuclear cooperation with India. The US reaction was the most severe. It cut off nuclear fuel for Tarapur and voted against aid to India.

But far from crippling the Indian nuclear industry the sanction spurred the nuclear scientists who in late 1975 started work on the nuclear reactor Dhruva. Starting work on a 100 MW reactor at the height of sanctions speaks for the determination of the scientists who took the decision. The events from 1960 to Pokhran I indicates that Indian policy which was based on idealism and pacifism

---

19. N. Sahagiri, The Bomb: Fallout of India's Nuclear Explosion, (Delhi, Vikas 1995).
20. New York Times, May 23, 1974, p. 5.

was forced to move towards a PNE. At no point in time did India actively pursue a policy of nuclear bomb acquisition. India stuck to its policy and emphasized even after the PNE of 1974 that the explosion had no military dimensions.

1974-1976 Era of Nuclear Ambiguity and Restraint:

This period was characterized by both, ambiguity and restraint. Certain factors, which played an important part in shaping India's nuclear programme in this period, are:

⇒ Firstly, Pakistan accelerated its nuclear programme.

⇒ Secondly USSR's invasion of Afghanistan. This caused a dramatic shift in US-Pakistan relations due to which US turned a blind eye to Pakistan's clandestine nuclear programme.

⇒ Thirdly, China's covert support to Pakistan's clandestine nuclear programme.

⇒ Fourthly, Morarji Desai who was vehemently opposed to India acquiring nuclear weapons headed the coalition government formed in 1977.

⇒ Fifthly, the IGMDP (Integrated Missile Development Program), which commenced in 1983 under Dr. Abdul Kalam.

⇒ Sixthly, India's rejection of all regional approaches towards nuclear restraint and regional disarmament.

⇒ Seventhly, imposition of technology control regimes, which had the positive impact of spurring indigenisation.

The initial restraint immediately after the Pokhran I explosion could be attributed to two factors. One was the adverse international reaction and at another

level the robust Indo-Soviet strategic relationship based on Indo-Soviet Friendship treaty of 1971 assuaged India's security concerns. This period of restraint continued up to mid-80s. In 1983 there was growing evidence of Chinese support to Pakistan's clandestine nuclear weapons programme. Yakub Khan was present at the Lap or Nuclear Test and US intelligence reported the transfer of a complete bomb design from China to Pakistan. The bomb design and enough uranium for two implosion devices were enough for a 20 to 25 kt. Yield and weighed 400 kg.[21]

On the scientific and technological front there was considerable progress. India's attempt to develop centrifuge capability materialised with enrichment plants being build at Trombay and Mysore. In July 1982 another enrichment plant was commissioned at Kalpakkam and in September 1982 the Mysore plant was producing uranium of 30% purity. In late 1983 the IGMDP was launched with Abdul Kalam at its head. The guts of India's weapons making programme was firmly established when Dhruva, India's nuclear reactor became operational in 1985.

During the period 1983-1993 India rejected a total of seven proposals by Pakistan for nuclear restraint and regional disarmament. However India joined the Five Continent Six Nation Initiative for Nuclear Disarmament in 1986 and signed the 'Delhi Declaration' for a nuclear weapons free world with Gorbachev the same year.

India also put forward the Rajiv Gandhi Plan for total elimination of nuclear weapons in the UN General Assembly's Fourth Special Session on Disarmament in 1988. Though this was a serious and well-conceived plan it was not pursued by

---

21. US Report http:cns.miisedu/india/china/npakchr.htm.

the Western powers after its presentation. All the above events forced the Indian Prime Minister Rajiv Gandhi to give a fresh look to the Indian bomb programme. In 1987 the US Press and Intelligence reported sale of M-11 missiles by China to Pakistan and these were reported arriving in crates in Karachi harbour. Troubled by these events and growing concern for India's security concerns with Pakistan moving rapidly towards a bomb capability, Rajiv Gandhi is reported to have given the go ahead for Indian bomb programme in 1988.[22]

The collapse of Soviets in 1991 had profound implications for India's security and hence for its nuclear policies. It resulted in the loss of a critical counter weight to the Chinese threat. Russia was too debilitated to provide much assistance to India. Narasimha Rao's government in 1991 was an indecisive one. Pressures were moulding on India to sign the CTBT.

The Nuclear Test:

The extension of the NPT, the passage of Brown Amendment in 1995, which led to a renewal of up to $ 368 million in US military assistance to Pakistan, provoked India's security concerns. India was anxious of the pressures it would face .

In the wake of extension of the NPT. Also moves towards the finalisation of the CTBT were also underway at Geneva. The Indian Government believed its window of opportunity to test was rapidly closing. In the politico strategic context Prime Minister Narasimha Rao permitted preparations for carrying out a nuclear test in December 1995. US Ambassador to India prevailed upon Prime Minister Narasimha Rao, who is well-known for his indecisiveness to call off the tests.[23]

22. Raja Menon, ibid, p. 97 and Sumit Ganguly, ibid, p. 51.

23. Science and Global Society 6 (1996) pp. 101-189.

On the nuclear and missile development front, steady progress was being made. In February 1988, the SSM *Prithvi* was launched by India. It had a payload of 1000 kg, a range of 150 km and a CEP (Circular Error of Probability) of 200 metres. India rested Its IRBM *Agni* in May 1089. The *Agni* was designed for a 1000 kg payload and had a range of 1000 km. The US reacted by revoking an earlier decision to supply the CAVTS (Combined Acceleration and Vibration Testing System). This system is required to qualify missile components against failure in simulated missile flight conditions. The Indians overcome this hurdle by producing indigenously. The US also refused transfer of the CRAY computer. The Indians produced an equivalent indigenously and responded by test firing the Agni for a second time in May 1992.

1997 to Pokhran II – Collapse of Ambiguity: Slippage into Nuclear Deterrence:

The three-year limit of signing the CTBT was to expire in September 1999. The Indian government was considering the option of testing once again based on the advice of the MEA (Ministry of External Affairs) and other think tanks.

On the technological side, a 930 kg. Satellite was launched by the PSLV in March 1996. This put a remote sensing Satellite into orbit from Sriharikota. The resolution of this Satellite would enable India to monitor both China and Pakistan's missile sites. In January 1998 India announced a deal with Russia for two 1000 MW reactors for the Kundankulam Power Project, the first nuclear power project in over a decade. On the political front, the BJP emerged as the largest single party in the national elections in March 1998 and assumed power with the support of a number of regional parties. In its elections manifesto, the BJP had spoken of

the perceived need to induct nuclear weapons into India's arsenal as well as to conduct a 'strategic review' of India's security environment. With this background and the substantial scientific, military and public support for the nuclear programme, India was waiting for a useful catalytic event to break from its long-standing policy of nuclear abstinence. The awaited moment came when Pakistan tested its IRBM *Ghauri* on 6th April 1998. The *Ghauri* had a range of 1500 km and could carry a 750 kg payload. Its range enabled Pakistan to target 26 Indian cities. The 1997 Ministry of Defence's annual report had expressed serious misgivings about China's support for Pakistan's nuclear and ballistic missile programmes. The testing of *Ghauri* by Pakistan provoked India's security concerns and was one of the main causes for India to carry out its Pokhran II explosion.

Between 11 and 13 May 1998 India exploded five weapons of 12 kt, 45 kt and three sub kilo ton shots of 0.2, 0.3 and 0.6 kilo tons. By so doing it crossed the nuclear Rubicon and set off a chain of events and different possibilities for the future, which are discussed in subsequent chapters.

To sum up in 1947, when India emerged as a free country to take its rightful place in the comity of nations, the nuclear age had already dawned. Our leaders then took the crucial decision to opt for self-reliance, and freedom of thought and action. We rejected the Cold War paradigm whose shadows were already appearing in the horizon and instead of aligning ourselves with either bloc, chose the more difficult path of non-alignment. This has required the building lip of national strength through our own resources. Our skills and creativity and the dedication of the people. Among the earliest initiatives taken by our first Prime

Minis Pt. Jawaharlal Nehru, was the development of science and inculcation of the scientific spirit. It is this initiative that laid the foundation for the achievement of 11 and 13 May made possible by exemplary cooperation among the scientists from Department or Atomic Energy and Defence Research & Development Organisation. Disarmament was then and continues to be a major plank in our foreign policy now. It was, in essence, and remains still, the natural course for a country that had waged a unique struggle for independence on the basis of '*ahimsa*' and '*satyagraha*'.

Department of nuclear technology transformed the nature of global security. Our leaders reasoned that nuclear weapons were not weapons of war, these were weapons of mass destruction. A nuclear weapon-free-world, therefore, enhance not only India's security but also the security of all nations. This is the principle plank of our nuclear policy. In the absence of universal and non-discriminatory disarmament, we cannot accept a regime that creates an arbitrary division between nuclear haves and have-nots. India believes that it is the sovereign right of every nation to make a judgement regarding its supreme national interests and exercise its sovereign right. At the same time, our leaders recognized early that nuclear technology offers tremendous potential for economic development, especially for developing countries that are endeavouring to leap across the technology gaps created by long years of colonial exploitation. This thinking was reflected in the enactment of the Atomic Energy Act of 1948, within a year of our independence. All the numerous initiatives taken by us since, in the field of nuclear disarmament have been in harmony and in continuation of those early enunciations.

In the 50's, nuclear weapons testing took place above ground and the characteristic mushroom cloud became the visible symbol of the nuclear age. India then took the lead in calling for an end to all nuclear weapon testing as the first step for ending the nuclear arms race. Addressing the Lok Sabha on 6 April 1954, shortly after a major hydrogen bomb test had been conducted. Pt. Jawaharlal Nehru stated that "nuclear, chemical and biological energy and power should not be used to forge weapons of mass destruction". He called for negotiations for prohibition and elimination of nuclear weapons and in the interim, standstill agreement to halt nuclear testing. The world had by then witnessed less than 65 tests. Our call was not heeded. In 1963, an agreement was concluded to ban atmospheric testing but by this time, countries had developed the technologies for conducting underground nuclear tests and the nuclear arms race continued unabated. More than three decades passed and after over 2000 tests had been conducted, a Comprehensive Test Ban Treaty was opened for signature in 1996, following two and a half years of negotiations in which India had participating actively. In its final shape, this Treaty left much to the desired. It was neither comprehensive nor was it related to disarmament.

In 1965, along with a small group of non-aligned countries, India had put forward the idea of an international non-proliferation agreement under which the nuclear weapons states would agree to give up their arsenals provided other countries refrained from developing or acquiring such weapons. This balance of rights and obligations was absent when the Nuclear Non-Proliferation Treaty (NPT) emerged in 1968, almost 30 years ago. In the 60's our security concerns deepened. But such was our abhorrence of nuclear weapons and such our desire

to avoid acquiring them that we sought instead security guarantees from major nuclear powers of the world. The countries we turned to for support and understanding felt unable to extend to us the assurances that we then sought. That is when and why India made clear its inability to sign the NPT.

The Lok Sabha debated the NPT on 5 April 1968. The then Prime Minister late Smt. Indira Gandhi assured the House that "we shall be guided entirely by our self-enlightenment and the considerations of national security". She highlighted the shortcomings of the NPT whilst re-emphasising the country's commitment to nuclear disarmament. She warned the House and the country "that not signing the Treaty may being the nation many difficulties. It may mean the stoppage of aid and stoppage of help. Since we are taking this decision together, we must all be together in facing its consequences". That was a turning point. This House then strengthened the decision of the Government by reflecting a national consensus.

Our decision not to sign the NPT was in keeping with the basic objective of maintaining freedom of thought and action. In 1974, we demonstrated our nuclear capability. Successive Governments thereafter have continued to take all necessary steps in keeping with that resolve and national will, to safeguard India's nuclear option. This was also the primary reason underlying the 1996 decision in the country not subscribing to the Comprehensive Test Ban Treaty (CTBT); a decision that met the unanimous approval of the House yet again. Our perception then was that subscribing to the CTBT would severely limit India's nuclear potential at an unacceptably low level. Our reservations deepened as the CTBT did not also carry forward the nuclear disarmament process. On both counts, therefore, yet

again our security concerns remained unaddressed. The them Minister for External Affairs, Shri I.K. Gujral had made clear the Government's reasoning to this House during the discussions on this subject in 1996.

The decades of the 80's and 90's meanwhile witnessed the gradual deterioration of our security environment as a result of nuclear and missile proliferation. In our neighbourhood, nuclear weapons increased and more sophisticated delivery systems were inducted. Further, in our region there has come into existence a pattern about clandestine acquisition of nuclear materials, missiles and related technologies. India, in this period, became the victim of externally aided and abetted terrorism, militancy and clandestine war through hired mercenaries.

The end of the Cold war marks a watershed in the history of the 20th century. While it has transformed the political landscape of Europe, it has done little to address India's security concerns. The relative order that was arrived at in Europe was not replicated in other parts of the globe.

At the global level, there is no evidence yet on the part of the nuclear weapon states to take decisive and irreversible steps in moving towards a nuclear-weapon-free-world. Instead, the NPT has been extended indefinitely and unconditionally, perpetuating the existence of nuclear weapons in the hands of the five countries who are also permanent members of the UN Security Council. Some of these countries have doctrines that permit the first use of nuclear weapons; these countries are also engaged in programmes for modernisation of their nuclear arsenals.

Under such circumstances, India was left with little choice. It had to take necessary steps to ensure that the country's nuclear option, developed and safeguarded over decades not be permitted to erode by a voluntary self-imposed restraint. Indeed, such an erosion would have had an irremediably adverse impact on our security. The Government was thus faced with a difficult decision. The only touchstone that guided it was national security. Tests conducted on 11 and 13 May are a continuation of the policies set into motion that put this country on the path of self-reliance and independence of thought and action. Nevertheless, there are certain moments when the chosen path reaches a fork and a decision has to be made. 1968 was one such moment in our nuclear chapter as were 1974 and 1996. At each of these moments, we took the right decision guided by national interest and supported by national consensus. 1998 was borne in the crucible of earlier decisions and made possible only because those decisions had been taken correctly in the past and in time.

At a time when developments in the area of advanced technologies are taking place at a breathtaking pace, new parameters need to be identified, tested and validated in order to ensure that skills remain contemporary and succeeding generations of scientists and engineers are able to build on the work done by their predecessors. The limited series of five tests undertaken by India was precisely such an exercise. It has achieved its stated objective. The data provided by these tests is critical to validate our capabilities in the design of nuclear weapons of different yields for different applications and different delivery systems. Further, these tests have significantly enhanced the capabilities of our scientists and engineers

in computer simulation of new designs and enabled them to undertake sub-critical experiments in future, if considered necessary. In terms of technical capability, our scientists and engineers have the requisite resources to ensure a credible deterrent.

Our policies towards our neighbours and other countries too have not changed; India remains fully committed to the promotion of peace with stability, and resolution of all outstanding issues through bilateral dialogue and negotiations. These tests were not directed against any country; these were intended to reassure the people of India about their security and convey determination that this Government, like previous Governments, has the capability and resolve to safeguard their national security interests. The Government will continue to remain engaged in substantive dialogue with our neighbours to improve relations and to expand the scope of our interactions in a mutually advantageous manner. Confidence building is a continuous process, we remain committed to it. Consequent upon the tests and arising from an insufficient appreciation of our security concerns, some countries have been persuaded to take steps that sadden us. We value our bilateral relations. We remain committed to dialogue and reaffirm that preservation of India's security creates no conflict of interest with these countries.

India is a nuclear weapon state. This is a reality that cannot be denied. It is not a conferment that we seek; nor is it a status for others to grant. It is an endowment to the nation by our scientists and engineers. It is India's due, the right of one-sixth of humankind. Our strengthened capability adds to our sense of

responsibility; the responsibility and obligation of power. India, mindful of its international obligations, shall not use these weapons to commit aggression or to mount threats against any country; these are weapons of self-defence and to ensure that in turn, India is also not subjected to nuclear threats or coercion. In 1994, we had proposed that India and Pakistan jointly undertake not to be the first to use their nuclear capability against each other. The Government on this occasion reiterates its readiness to discuss a "no-first-use" agreement with that country, as also with other countries bilaterally, or in a collective forum India shall not engage in an arms race. India shall also not subscribe to reinvent the doctrines of the Cold War. India remains committed to the basic tenet of our foreign policy – a conviction that global elimination of nuclear weapons will enhance its security as well as that of the rest of the world. It will continue to urge countries, particularly other nuclear weapon states to adopt measures that would contribute meaningfully to such an objective.

A number of initiatives have been taken in the past. In 1978, India proposed negotiations for an international convention that would prohibit the use or threat of use of nuclear weapons. This was followed by another initiative in 1982 calling for a 'nuclear freeze' – a production of nuclear weapons, and related delivery systems. In 1988, we put forward an Action Plan for phased elimination of all nuclear weapons within a specified time frame. It is our regret that these proposals did not receive a positive response from other nuclear weapon states. Had their response been positive, India need not have gone for the current tests. This is where our approach to nuclear weapons is different from others. This difference

is the cornerstone of our nuclear doctrine. It is marked by restraint and striving for the total elimination of all weapons of mass destruction.

We will continue to support such initiatives, taken individually or collectively by the Non-Aligned Movement, which has continued to attach the highest priority to nuclear disarmament. This was reaffirmed most recently, last week, at the NAM Ministerial meeting held at Cartagena, which has "reiterated their call on the Conference on Disarmament to establish, as the highest priority, an ad hoc committee to start in 1998 negotiations on a phased programme for the complete elimination of nuclear weapons with a framework of time, including a Nuclear Weapons Convention". The collective voice of 113 NAM countries reflects an approach to global nuclear disarmament to which India has remained committed. One of the NAM member initiatives to which we attach great importance was the reference to the international Court of Justice resulting in the unanimous declaration from the ICJ, as part of the Advisory Opinion handed down on 8 July, 1996, that "there exists an obligation to pursue in good faith and bring to a conclusion negotiations leading to nuclear disarmament in all its aspects under strict and effective international control". India was one of the countries that appealed to the ICJ on this issue. No other nuclear weapon state has supported this judgement; in fact, they have sought to decry its value. We have been and will continue to be in the forefront of the calls for opening negotiations for a Nuclear Weapons Convention, so that this challenge can be dealt with the scourge of two other weapons of mass destruction – through the Biological Weapons Convention and the Chemical Weapons Convention. In keeping with our commitment to comprehensive, universal and non-discriminatory approaches to disarmament,

India is an Original State Party to both these Conventions. Accordingly, India will shortly submit the plan of destruction of its chemical weapons to the international authority – Organisation for the Prohibition of Chemical Weapons. We fulfil our obligations whenever we undertake them.

Traditionally, India has been an outward looking country. Our strong commitment to multilateralism is reflected in our active participation in organisations like the United Nations. In recent years, in keeping with the new challenges, we have actively promoted regional cooperation – in SAARC, in the Indian Ocean Rim-Association for Regional Cooperation and as a member of the ASEAN Regional Forum. This engagement will also continue. The policies of economic liberalisation introduced in recent years have increased our regional and global linkages and the Government shall deepen and strengthen these ties.

Our nuclear policy has been marked by restraint and openness. It has not violated any international agreements either in 1974 or now. In 1998. Our concerns have been made known to our interlocutors in recent years. The restraint exercised for 24 years, after having demonstrated our capability in 1974, is in itself a unique example. Restraint, however, has to arise from strength. It cannot be based upon indecision or doubt. Restraint is valid only when doubts are removed. The series of tests undertaken by India have led to the removal of doubts. The action involved was balanced in that it was the minimum necessary to maintain what is an irreducible component of our national security calculus. This Government's decision has, therefore to be seen as part of a tradition of restraint that has characterised our policy in the past 50 years.

Subsequent to the tests Government has already stated that India will, now observe a voluntary moratorium and refrain from conducting underground nuclear test explosions. It has also indicated willingness to move towards a de-jure formalisation of this declaration. The basic obligation of the CTBT is thus met, to refrain from undertaking nuclear test explosions. This voluntary declaration is intended to convey to the international community the seriousness of our intent for meaningful engagement. Subsequent decision will be taken after assuring ourselves of the security of the country.

India has also indicated readiness to participate in negotiations in the Conference on Disarmament in Geneva on a Fissile Material Cut-off Treaty. The basic objective of this treaty is to prohibit future production of fissile materials for use in nuclear weapons or nuclear explosive devices. India's approach in these negotiations will be to ensure that this treaty emerges as a universal and non-discriminatory treaty, backed by an effective verification mechanism. When we embark on these negotiations, it shall be in the full confidence of the adequacy and credibility of the nation's weaponised nuclear deterrent.

India has maintained effective export controls on nuclear materials as well as related technologies even though we are neither a party to the NPT nor a member of the Nuclear Suppliers' Group. Nonetheless, India is committed to non-proliferation and the maintaining of stringent export controls to ensure that there is no leakage of our indigenously developed know-how and technologies. In fact, India's conduct in this regard has been better than some countries party to the NPT.

India has in the past conveyed our concerns on the inadequacies of the international nuclear non-proliferation regime. It has explained that the country was not in a position to join because the regime did not address our country's security concerns. These could have been addressed by moving towards global nuclear disarmament, our preferred approach. As this did not take place, India was obliged to stand aside from the emerging regime so that its freedom of action was not constrained. This is the precise path that was continued to be followed unwaveringly for the last three decades. That same constructive approach will underline India's dialogue with countries that need to be persuaded of our serious intent and willingness to engage so that mutual concerns are satisfactorily addressed. The challenge to Indian statecraft is balancing and reconciling India's security imperatives with valid international concerns in this regard.

The House is aware of the different reactions that have emanated from the people of India and from different parts of the world. The overwhelming support of the citizens of India is a source of strength for the Government. It not only tells that this decision was right but also that the country wants a focused leadership, which attends to national security needs. This, the Government pledges to do as a sacred duty. The Government has also been greatly heartened by the outpouring of support from Indians abroad. They have, with one voice, spoken in favour of the Government's action. The Government conveys its profound gratitude to the citizens of India and to Indians abroad, and looks to them for support in the difficult period ahead.

In this, the fiftieth year of our independence, India stands at a defining moment in our history. The rationale for the Government's decision is based on the same

policy tenets that have guided the country for five decades. The policies were sustained successfully because of the underlying national consensus. The present decision and future actions will continue to reflect a commitment to sensibilities and obligations of an ancient civilisation, a sense of responsibility and restraint, but a restraint born of the assurance of action, not of doubts or apprehension. The *Gita* explains (Chapter VI-3) as none other can.

However, India's nuclear doctrine can be summarized as follows:

(i) Building and maintaining a credible minimum deterrent;

(ii) A posture of "No First Use": nuclear weapon will only be used in retaliation against a nuclear attack on Indian Territory or on Indian forces anywhere;

(iii) Nuclear retaliation to a first strike will be massive and designed to inflict unacceptable damage;

(iv) Nuclear retaliatory attacks can only be authorised by the civilian political leadership through the Nuclear Command Authority;

(v) Non-use of nuclear weapons against non-nuclear weapon states;

(vi) However, in the event of a major attach against India, or Indian forces anywhere, by biological or chemical weapons, India will retain the option of retaliating with nuclear weapons;

(vii) A continuance of strict controls on export of nuclear and missile related materials and technologies, participation in the Fissile Material Cut-off Treaty negotiations, and continued observance of the moratorium on nuclear tests;

(viii) Continued commitment to the goal of a nuclear weapon free world, through global, verifiable and non-discriminatory nuclear disarmament.

The Nuclear Command Authority comprises a Political Council and an Executive Council. The Prime Minister chairs the Political Council. It is the sole body, which can authorize the use of nuclear weapons.

The National Security Advisor chairs the Executive Council. It provides inputs for decision-making by the Nuclear Command Authority and executes the directives given to it by the Political Counc.